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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/829,598

04/22/2004

Jason A. Graetz

27-06

6855

23713

7590

10/24/2007

GREENLEE WINNER AND SULLIVAN P C

4875 PEARL EAST CIRCLE

SUITE 200

BOULDER, CO 80301

EXAMINER

HODGE, ROBERT W

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

10/24/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/829,598	Applicant(s) GRAETZ ET AL.	
	Examiner Robert Hodge	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2007.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 19-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/19/04, 5/5/06 &amp; 10/4/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group I, claims 1-18 in the reply filed on 9/12/07 is acknowledged.

### ***Information Disclosure Statement***

The information disclosure statements (IDS) submitted on 7/19/04, 5/5/06 and 10/4/06 have been considered by the examiner.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 13-18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by WO 01/96847 hereinafter Zhou.

Zhou teaches an electrode for a secondary electrochemical cell comprising a nanostructured alkali metal alloy, such as a lithium metal alloy containing Germanium, wherein the nanostructured material can be nanoparticles having a diameter between 1-50 nanometers or a nanofilm that is coated onto a current collector and a binder is present (see pages 3, 5 and 6). The Examiner notes because the instantly claimed

invention has been found in the prior art, it reads on the intended use and properties recited in claims 13-15.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou in view of U.S. Pre-Grant Publication No. 2004/0106741 hereinafter Kriesel.

Zhou as discussed above is incorporated herein.

Zhou does not teach the specific thickness of the nanofilm, but does teach that the size of the particles used in the film, which when used as a coating such as in Zhou would form a very thin nanofilm.

Kriesel teaches that the thickness of nanofilms can be formed in a range of 1-30 nanometers (paragraphs [0018] and [0191]).

At the time of the invention it would have been obvious to one having ordinary skill in the art to form the nanofilm of Zhou in a range of 1-30 nanometers as taught by Kriesel in order to provide an electrode that has an increased capacity without increasing the overall size of the secondary electrochemical cell that the electrode will be used in.

Claims 11 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou in view of U.S. Patent No. 4,346,152 hereinafter Sammels.

Zhou as discussed above is incorporated herein.

Zhou does not teach the specific lithium alloy formula recited in claims 11 and 12.

Sammels teaches an electrode for a secondary electrochemical cell comprising either a lithium-germanium alloy having the formula  $\text{Li}_x\text{Ge}_y$  wherein  $0 < x \leq 4.4$  and  $y = 1$  or a lithium-germanium-silicon alloy having the formula  $\text{Li}_a\text{Ge}_b\text{Si}_c$  wherein  $0 < a \leq 4.4$ ,  $0.02 \leq b \leq 0.05$  and  $c = 1$  (column 3, line 55 – column 4, line 53).

The Examiner notes that in the instantly claimed invention if  $z = 1$  then no silicon is present.

At the time of the invention it would have been obvious to one having ordinary skill in the art to include the alloy formulas of Sammels in Zhou in order to provide a secondary electrochemical cell electrode that has improved stability thus increasing the overall life of the secondary electrochemical cell.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Hodge whose telephone number is (571) 272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RWH

  
JONATHAN CREPEAU  
PRIMARY EXAMINER